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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,660	01/08/2002	Kazuo Miyaguchi	X-A-9120A	9810
7590	11/05/2003			EXAMINER
Mitchell W. Shapiro Miles & Stockbridge P.C. 1751 Pinnacle Drive, Suite 500 McLean, VA 22102-3833				LEWIS, TISHA D
			ART UNIT	PAPER NUMBER
				3681

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

SK

Office Action Summary	Application No.	Applicant(s)
	10/038,660	MIYAGUCHI ET AL.
	Examiner TISHA D. LEWIS	Art Unit 3681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.
 - 4a) Of the above claim(s) 3 is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1,2 and 4-11 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following is a response to the amendment received on September 8, 2003 which has been entered.

Information Disclosure Statement

The information disclosure statement filed on May 21, 2003 has been acknowledged.

Response to Amendment

Claims 1-11 are pending in the application. Claim 3 had been withdrawn in the office action mailed on June 26, 2002 as being drawn to a non-elected species.

-The 103(a) rejection of claims 1, 2, 4, 5, 7-9 and 11(Agari in view of Grolmann et al) has not been withdrawn as per applicant's request (see response to arguments below).

-The 103(a) rejection of claims 6 and 10 (Agari in view of Grolmann et al and further in view of Kaiser et al) has not been withdrawn as per applicant's request (see response to arguments below).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 4, 5, 7-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agari in view of Grolmann et al ('806). As to claims 1, 2 and 11, Agari discloses a linear motion device including:

an outer member (1),
an inner member (2) facing the outer member via a gap,
a plurality of balls (7) disposed between the members,
a plurality of spacers (50), the outer member being slidable to the inner member, the spacer having concave surfaces facing two opposing balls (Figure 5),
a central portion (52 via 54) of the concave surfaces being diagonally rectilinear to an outer portion (55) of the spacer, but the outer portion is not contacting the balls.

Grolmann et al discloses a spacer for a bearing assembly having a concave surface for balls wherein the surface has a frusto-conical shape with an outer portion forming line contact with the balls.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the spacer of Agari in view of Grolmann et al to provide a contacting surface between the spacer and ball that can keep the ball from slipping away from the concave surface of the spacer.

As to claims 4 and 8, Agari discloses the spacer formed as an integral member.

As to claim 7, Agari discloses the central portion (52) of the spacer (50) perpendicular to centers between the two opposing balls wherein the outer portion (55) is diagonally extending from opposite ends of the central portion to an edge of the spacer (via 53).

As to claims 5 and 9, Agari discloses a spacer between opposing balls for a linear motion device, but does not disclose as to the material of the spacers.

Grolmann et al discloses a spacer for placement between opposing balls using an elastic material which can be formed from a plastic.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to design the spacers of Agari from plastic in view of Grolmann et al to have self lubricating properties from the plastic.

Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agari in view of Grolmann et al as applied to claims 1 and 2 above, and further in view of Kaiser et al ('243). Agari discloses a spacer between opposing balls for a linear motion device, but does not disclose as to the material of the spacers.

Grolmann et al discloses a spacer for placement between opposing balls, but only discloses an elastic material for the spacer.

Kaiser et al discloses a spacer (1) for a rolling bearing which can be made of different materials including metal (column 2, lines 56-58).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to design the spacers of Agari and Grolmann et al from metal in view of Kaiser et al to have high strength properties from the metal to resist high heat or wear.

Response to Arguments

Applicant's arguments filed September 8, 2003 have been fully considered but they are not persuasive. As to applicant's response to the examiner's suggestion in the

office action mailed on May 16, 2003 under "Response to Arguments", the applicant contends that the specification (page 21 to page 22) and drawings (Figures 2a and 3) do clearly disclose what line contact is between the balls and spacer, is acknowledged by the examiner. However, the specification pages and drawings indicated by applicant does not cover the embodiment elected by applicant in the office action mailed on June 26, 2002 in which Group I covering Figure 17 was elected. Again, applicant may want to give more detail as to what is meant by the term "line contact" as to Figure 17. It seems that the Figure itself and the specification (pages 33, last line to page 34 lines 1-10) seem to suggest linearly contact between an **outer edge** of the spacer and ball, not line contact between a **frusto-conical surface portion** and ball (claim 1). Also, applicant points out that the circular line contact with a frusto-conical surface is explained on page 34, lines 6-10, but there is no mention of **circular line contact** in the specified disclosure.

Applicant's argument as to the Grolmann reference not providing line contact between a frusto-conical surface and a ball is acknowledged with applicant giving an example of what is meant by circular line contact between the ball and surface (page 4 of the amendment lines 3-8). However, since the claim 1 only suggest that **a surface portion** of the frusto-conical surface has to have line contact with the ball, then in the Figure 8 of Grolmann et al, the portion is the bottom face 6 which has to have line contact with the ball due to the face's protruding, but straight form. Also, as to applicant's example, the Figure 17 and specification covering this figure does not

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disclose "a ball contacting the *inner wall* of a cone along a circumference", but rather, the Figure discloses a ball contacting an *outer edge* of a spacer along a circumference. And as to claim 2, Grolmann et al (Figure 8) does disclose the ball having circular line contact with a sectional shape (inner surface extending from bottom face 6) of the spacer.

Examiner suggest applicant amend claims 1 and 2 to disclose where the surface of the ball meet on the surfaces of the spacer (i.e. outer edge, middle, top edge, etc.).

FACSIMILE TRANSMISSION

Submission of your response by facsimile transmission is encouraged. Group 3600's facsimile number is **(703) 305-3597**. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of correspondence not permitted by facsimile transmission, see MPEP 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check should not be submitting by facsimile transmission separately from the check.

Responses submitted by facsimile transmission should include a Certificate of Transmission (MPEP 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to
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Typed or printed name of person signing this certificate:

(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MPEP 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only

cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TISHA D. LEWIS whose telephone number is 703-305-0921. The examiner can normally be reached on M-Thur 8 AM TO 3 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CHARLES A. MARMOR can be reached on 703-308-0830. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2168.

Tdl
November 3, 2003

[Signature]
Tisha D Lewis
Patent Examiner
Art 3681 11-3-03